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**DO WOMEN BENEFIT FROM FDI?
FDI AND LABOR MARKET
OUTCOMES IN CAMBODIA**

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Abstract

Although we have solid empirical evidence on the impact of foreign direct investment (FDI) on various labor market outcomes, empirical studies on the effects on women remain very limited. This paper aims to contribute to this literature by examining the case of Cambodia. Using national household level data from the Cambodia Socio-Economic Survey, we assess how FDI affects women's wages and formality compared to men in the manufacturing sector. We compare outcomes in the garment sector and in all other manufacturing sectors. We use exogenous variations of inward FDI across provinces linked to spatial differences in the initial industry's composition as an instrument to identify the causal effect of FDI on labor market outcomes. Our results indicate that FDI helps to increase wages and the probability of working in the formal sector, for both the garment sector and all other manufacturing sectors. However, we do not find evidence that FDI helps to reduce the gender wage gap in either.

Contents

1. INTRODUCTION

Gender equality and women's economic empowerment are essential to fostering economic growth, promoting social development, and enhancing business performance. Women's labor force participation has been advancing in most countries, hand in hand with an increasingly integrated world economy. One of the most notable features of international economic integration is foreign direct investment (FDI), defined as a cross-border investment by a person (natural or legal) exercising control or significant influence over the management of the enterprise abroad. FDI has received considerable attention as a source of economic development, especially through technology transfer (e.g., Nabin, Nguyen, and Sgro 2013). Considering the potential benefits, many governments in developing and emerging economies have undertaken substantive efforts to become an attractive destination for FDI.

The impacts of FDI on host countries' labor markets in terms of wages and other outcomes have been studied extensively.[1] However, we still have very limited empirical evidence regarding the impact of FDI on gender-related outcomes. This paper contributes to this sparse literature by studying the impact of FDI on labor market outcomes with a gender focus in Cambodia. Using nationally representative household survey data collected in 2004, 2009, and 2014, we investigate the relationship between FDI and women's labor market outcomes in terms of wages and probability of formal employment. Our study focuses on paid employment in manufacturing (i.e., not self-employed). We split the manufacturing sector into two groups: the garment sector, and other manufacturing sectors. The garment sector has represented the backbone of Cambodia's economy in recent decades and is also the major employer of Cambodian women.

One of the main challenges in the literature on FDI and labor-market outcomes is the identification problem, which arises from the fact that FDI is not randomly distributed across industries, regions, and countries (Hale and Xu 2016). Rather, FDI tends to occur in places where foreign companies expect high profitability, a phenomenon termed the "cherry-picking effect." This influences the labor market effects of FDI, as firms with positive prospects tend to have higher wages compared to prevailing local salaries. Several empirical studies on the impact of FDI simply use ordinary least squares (OLS) regressions without controlling for possible endogeneity. In order to overcome the identification challenge, we employ an instrumental variables (IV) approach. We use the exogenous variations of inward FDI across provinces linked to spatial differences in the provinces' initial industry composition in order to identify the causal effects of FDI on labor market outcomes.

Overall, we find a statistically significant and positive relationship between FDI and key labor market outcomes in terms of wages and the probability of working in the formal sector. Furthermore, our results reveal that FDI helps to eliminate the gender gap with regard to wages and, more importantly, probability of working in the formal sector in other manufacturing sectors. Nevertheless, we also find that FDI does not lower the wage gap in the garment sector.

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[1] Hale and Xu (2016) provide a meta-analysis demonstrating that FDI has positive effects on host countries' labor markets.

1.1 Literature Review

There is considerable literature regarding the relationship between FDI and labor market outcomes. For instance, Aitken, Harrison, and Lipsey (1996), Hunya (1997), and Golejewska (2002) all argue that foreign-owned firms generally pay higher wages compared with their domestic counterparts. This is explained by the fact that foreign-owned firms use more advanced technology and thus require higher levels of skills. However, we find only a few studies examining the impact of FDI on labor market outcomes with a gender focus. For instance, Braunstein and Brenner (2007) examine the impact of FDI on the pay gap between female and male workers in the People's Republic of China (PRC). They find that this effect is contingent on whether the FDI is directed more toward male- or female-dominated industries. In the PRC, early FDI proved advantageous for women, but by 2002 men experienced larger wage gains from FDI than women due to industrial upgrading being more tilted toward male-dominated industries.

The literature on the impact of trade opening (measured in terms of tariff changes as opposed to FDI) on the gender wage gap usually finds that openness has helped women. For example, Gaddis and Pieters (2012) provide evidence that tariff reductions are associated with an increase in female labor force participation and employment in Brazil. They also address the identification problem of trade flows using the instrumental variable approach. Furthermore, Kis-Katos, Pieters, and Sparrow (2018) investigate the gender-specific effects of trade liberalization in Indonesia, concluding that a reduction in input tariffs leads to improved labor opportunities for women, and increases their work participation and working hours. Finally, Jamielaa and Kawabata (2018) study have studied the case of Indonesia, and show that trade openness helped to reduce the gender wage gap between 2008 and 2014.

Finally, several empirical studies consider the impact of globalization (mostly categorized by trade integration) on informality, but the results are mixed. For the case of Brazil, Dix-Carneiro and Kovak (2017) find that regions facing larger tariff cuts have experienced more prolonged declines in formal sector employment and earnings relative to other regions. In contrast, McCaig and Pavcnik (2018), analyzing the impact of United States (US) tariff reductions on labor allocation in Viet Nam, demonstrate that these decrease the probability of working for a household business, resulting in a reallocation of workers toward the formal sector. Moreover, Ben Yahmed and Bombarda (2018) study the impact of trade liberalization on formal employment across gender in Mexico, with their results indicating that tariff cuts increase the probability of working in the formal sector, especially for men.

1.2 Trade and FDI Trends in Cambodia

Starting in the 1970s, Cambodia experienced nearly two decades of political upheavals, civil wars, and foreign occupation, leading to a substantial loss of human capital and all types of infrastructure. In 1989, the country underwent a drastic economic reform from a centrally planned economy to a market economy. The economic reform included the privatization of state-owned enterprises (SOEs), integration into the regional and multilateral trade architecture, and a favorable FDI regime through the establishment of special economic zones (SEZ). Cambodia became a member of the Association of Southeast Asian Nations (ASEAN) Free Trade Area in 1999, and subsequently became a member of the World Trade Organization (WTO) in October 2004 as the first least-developed country.

Figure 1 displays the aggregate volume of exports by sector in Cambodia for the years 1997 to 2015. The total volume of exports increased significantly from a total of $448 million in 1997 to $13.8 billion in 2015. In most years the garment sector generated more than 90% of total exports, and it has grown impressively over the past two decades, starting from $302 million to become a $11.4 billion export industry in 2015. The garment sector has become the backbone of the country's economy, earning billions of dollars of foreign exchange and employing hundreds of thousands of workers (87% of whom are female), thereby significantly contributing to economic growth and poverty alleviation.

Figure 1: Cambodia's Exports by Sector (1997–2015)
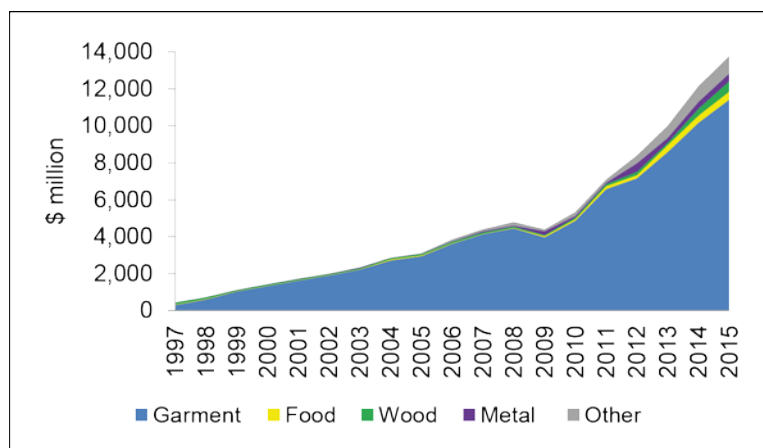
Source: Authors' calculations based on UN Comtrade.

Regarding export destinations, the garment sector in Cambodia heavily relies on two main export markets, namely the United States and the European Union (EU), which together account for 73% of total garment exports. Until 2011, the US was the largest market for the sector's exports, but the EU has since become more significant, as Figure 2 shows. The surge of exports to the EU is mainly due to the EU's 'Everything But Arms' (EBA) scheme[2] and its relaxation of the rules of origin[3] in 2011. Given that Cambodia's garment industry uses raw materials, fabrics, and other inputs that are mainly imported from the PRC, more flexible rules of origin have enabled it to qualify for preferential market access to the EU.

To transform and modernize Cambodia's industrial structure from a labor-intensive industry to a skill-based industry by 2025, the Royal Government of Cambodia (2015) has adopted an Industrial Development Policy 2015–2025. The government established the policy to mobilize and attract FDI as a vehicle of economic growth and a key driver of the growth of the formal sector. Figure 3 presents a trend in inward FDI stock in the manufacturing sector for the periods 2001 to 2014, based on data provided by the Central Bank of Cambodia as well as the authors' own calculations. During the entire period, a substantial proportion of FDI inflows were directed toward the garment sector, and increased in absolute terms from $3.2 million in 2001 to $2.6 billion in 2014. The garment sector was the most successful in attracting inward FDI into Cambodia,

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2   The EU's generalized system of preferences (GSP), which grants all products apart from arms and ammunition from 49 of the world's least developed countries (LDCs) duty-free and quota-free access to the EU market.

3   Rules that determine the criteria by which to decide whether goods were really produced or manufactured in the beneficiary country to which the preferential tariff treatment is granted.

representing about 70% of total FDI stock in manufacturing and 20% of total FDI stock including the service sector.

Figure 2: Cambodia's Garment Exports by Major Markets (1997–2005)
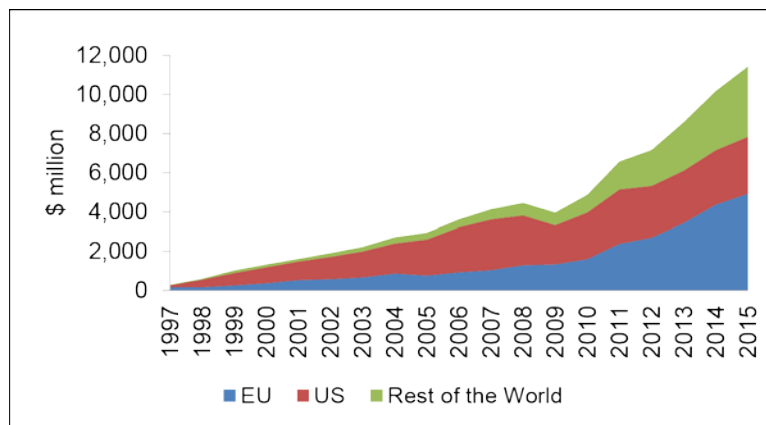
Source: Authors' calculations based on UN Comtrade.

Figure 3: FDI Stock by Sector (Garment and Other Manufacturing)
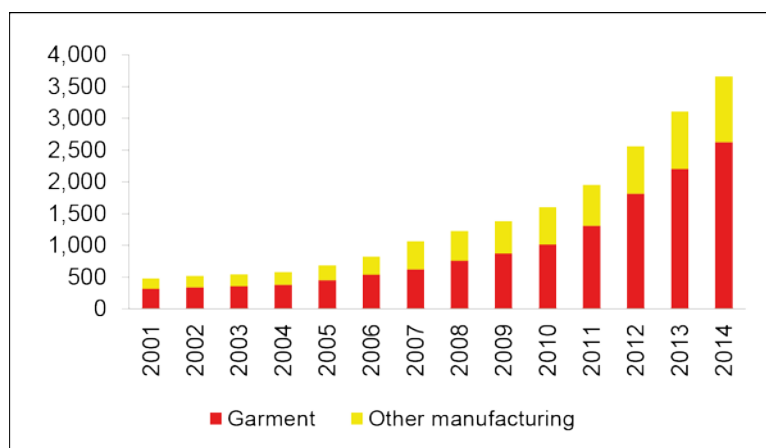
Source: Bank of Cambodia and authors calculations for years 2001 to 2007.

Regarding foreign investors' countries of origin, Figure 4 indicates that Cambodia's garment sector is largely owned by foreign investors, mainly from the PRC. According to the Garment Manufacturers' Association in Cambodia (GMAC)'s estimate, out of a total of more than 600 garment factories, the share of 100% Cambodian-owned factories is just 5%. It should also be noted that the imports of inputs into the garment sector from the PRC usually enjoy a full tariff exemption (Chheang and Hamanaka 2011). The government has granted these favorable terms to attract additional FDI from the PRC.

Figure 4: Ownership of Garment Factories
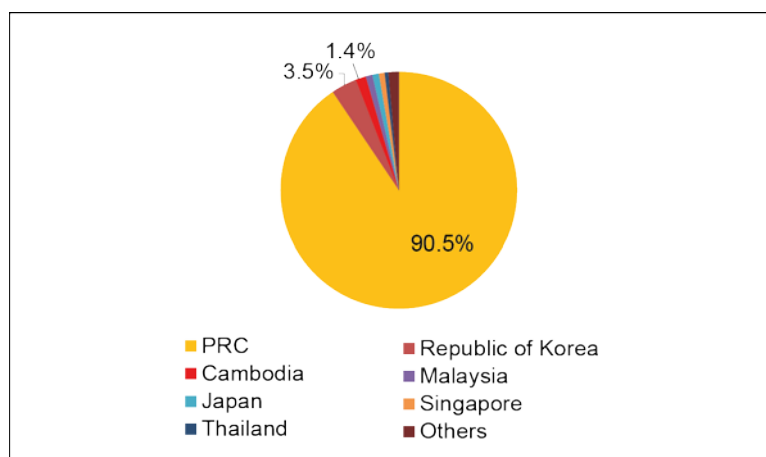
Source: Garment Manufacturers' Association of Cambodia.

2. DATA

2.1 Data Sources

The data for the analyses are drawn from several different sources. First, the main data source of our study is a nationally representative household survey collected by the National Institute of Statistics (NIS) under the Ministry of Planning of the Royal Government of Cambodia, called the Cambodia Socio-Economic Survey (CSES). The survey is conducted yearly, but every five years with a large sample size. We therefore use the years 2004, 2009, and 2014 of large CSES data for the regression analyses. These three waves of surveys each cover between 12,000 and 15,000 households, corresponding to 54,000 to 75,000 individuals. The survey provides a comprehensive set of indicators on living conditions in Cambodia, covering the main socio-economic areas such as health, education, and economic activities. We consider three key labor market outcomes – (1) monthly wages; (2) hourly wages; and (3) the probability that individuals work in the formal sector (defined as workers whose employment status is either employee or employer) – all referring to the population aged between 15 and 64 years old.

The FDI data come from the Central Bank of Cambodia. FDI inflow data by sector have only been recorded by the Central Bank since 2007. Indeed, prior to 2007, only the total FDI inflows are known. In order to proxy the FDI inflows by sector in 2004, we assume that FDI had the same average share by industry as in the period from 2007 to 2014. Finally, to create an instrumental variable for FDI, we use the UN Comtrade database (repository of official international trade statistics) to obtain the trade value (US dollars) by sector.

2.2 Descriptive Analysis

Table 2 presents the gender ratio of paid employees in the garment sector and other manufacturing sectors by year. As the table shows, females account for nearly 80% of the workforce in the garment sector. By contrast, women only account for about 20% in the other manufacturing sectors. Over time, in the garment sector as well as in the other manufacturing sectors, women have seen their shares fall, which might indicate that women are increasingly moving into service industries.

Table 2: Gender Ratio of Workers in Garment and Other Manufacturing Sectors

Year	Garment		Other Manufacturing	
	Female	Male	Female	Male
2004	83.1%	16.9%	23.8%	76.2%
2009	83.3%	16.7%	15.0%	85.0%
2014	77.4%	22.6%	16.2%	83.8%

Source: Authors calculations.

Table 3 presents summary statistics and the results of a test of mean difference of several labor market outcomes using the CSES data in 2004, 2009, and 2014. As indicated in the table, women have a lower monthly income compared to men in both the garment and other manufacturing sectors. However, when calculating the hourly wage, the gender difference is no longer statistically insignificant.[4]

The table also compares the likelihood of being formally employed. The likelihood of having formal employment is high in the garment sector. An overwhelming majority of workers enjoy the benefit of a formal job, with men being slightly more likely than women.

The reason for the high level of formality in the garment sector is the fact that this sector is largely owned and run by foreign investors that offer formal employment. In the other manufacturing sectors, formal employment is much rarer. Only about a quarter of the female population are formally employed, in contrast to about half the male population. Overall, the gender disparities are more marked in the manufacturing sector than in the garment sector.

Table 3: Summary Statistics of Labor Market Outcomes

	Garment			Other Manufacturing		
	Female	Male	p-value	Female	Male	p-value
Monthly wage income (US$ purchasing power parity, PPP)	176.27	188.35	0.01	152.23	196.51	0.00
Hourly wage (US$ PPP)	0.85	0.89	0.20	0.91	0.96	0.58
Probability of working in formal sector	0.87	0.90	0.00	0.25	0.51	0.00

Source: Authors' calculations.

3. METHODOLOGY

3.1 Calculation of FDI by Sector and by Province

First, to calculate inward FDI by sector and by province, we follow Topalova's (2010) methodology and construct a region-level, time-varying measure of exposure to trade reforms. Namely, we calculate the provincial variation of inward FDI by sector based on the employment share of each sector by province in 1997, prior to Cambodia joining the WTO and the expansion of FDI. In a first step, we divide the manufacturing sector into garment and other manufacturing, comprising the manufacture of food (37%), wood

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[4] Since 2013, the statutory minimum wage level in the garment sector has been rising, from $80 in 2013 to $100 in 2014, and $170 in 2018.

(36%), metal products (10%), and other (17%). Thus, we have two categories of sectors: (1) garment, and (2) other manufacturing.

In a second step, using CSES 1997 data, we calculate the average employment share by each sector at the provincial level (Table A1 in the Appendix). In the third step, we use the employment share as weights to allocate the total FDI amount in each year to the sectoral and provincial level. Thus, the equation by which to estimate FDI in province *p* in industry *i* in year *t* is as follows:

$$FDI_{p,t,i} = \frac{\sum_i Worker_{p,i,1997}}{Total\ Worker_{p,1997}} \times TotalFDI_{p,t}$$

3.2 Empirical Framework

To measure the impact of FDI on labor market outcomes, we estimate an individual-level model on the pooled sample. The estimation equation is the following:

$$Y_{i,p,t} = \alpha + \beta\ FDI_{p,t} + \gamma\ (Female_{i,p} * FDI_p) + \delta\ X_{i,p,t} + \mu_r + \Lambda_i + \theta_t + \varepsilon_{i,p,t} \quad [1]$$

Where $Y_{i,p,t}$ is an individual-level outcome, *i*, in a province, *p*, in a given year, *t*: (1) log of hourly wage[5]; (2) log of monthly wage; and (3) the probability that the individual works in the formal sector (working age between 15 and 64 years old). The FDI is the log of inward FDI stock by sector (garment and other manufacturing) and by province in a given year t, and β is the parameter estimate of interest. Furthermore, we include the interaction term of the female dummy and FDI to verify the differential impact of FDI by gender. X is a vector of individual-level control variables (gender, age, square root of age, years of education, marital status, urban dummy, household size, and number of children). μ is a province fixed effect that captures unobserved provincial heterogeneity, Λ denotes industry fixed effects, while year-fixed effects, θ, control for macroeconomic factors and other trends affecting the country as a whole. Finally, standard errors are clustered at the provincial level.

This simple estimation strategy does not control for endogeneity. Possible endogeneity arises from the fact that FDI flows are not randomly allocated across firms, industries, sectors, and regions. Indeed, foreign investors seek to invest in places that they view as having high growth and profitability potential, called the "cherry-picking effect." This phenomenon extends to the labor market effects of FDI, as firms with positive future prospects tend to have higher wages and grow faster relative to their peers. Thus, employing a simple OLS regression model [1] causes a biased estimate, β, so we tackle this identification problem by using the IV approach. This enables us to identify variation in the FDI measure that is not due to the firm's expected growth prospects, and to use this variation of FDI to measure the impact as a fully exogenous portion.

To instrument for FDI, we use the fact that good access to foreign markets is an important consideration behind the foreign investment into Cambodia. Thus, we use the weighted distance between provincial capitals and ports in interaction with an index of weighted trade values by sector in a given year and a given province. The calculation steps are as follows. First, we measure the actual distance between the provincial capitals and the two main international ports in Cambodia, namely Sihanoukville Autonomous Port (PAS), and Phnom Penh Autonomous Port (PPAP). In a second step, we calculate the weighted

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[5]   Wage data deflated across years using the 2005 PPP conversion factor with 2010 as the base year, taken from the World Development Indicators (WDI) to make them comparable across years.

distance between the provincial capitals and each port using the share of each container port[6] based on Table 1 to reflect their relative importance in terms of the number of containers. As a third step, we calculate the index of weighted trade value by sector using the data of trade values in US dollars and the quantity (kg) of three different sectors in each year, obtained from the UN Comtrade database. As a final step, we interact the weighted distance between provincial capitals and each port with the index of weighted trade value by sector to obtain the values as an instrument, IV_km for $FDI_{p,t}$, in equation [1].

Table 4: International Container Throughput (Phnom Penh and Sihanoukville)

	2009		2014	
Total container throughput	125,260		232,426	
Phnom Penh	22,808	18%	71,561	31%
Sihanoukville	102,452	82%	160,865	69%

Source: Authors' calculations based on data provided by PPAP's Planning/Statistics Office and PAS.

4. EMPIRICAL RESULTS

4.1 Impact of FDI on Labor Market Outcomes

Table 5 presents the estimation results of the garment sector for the three different outcome measures: (1) log of hourly wage; (2) log of monthly wage; and (3) the probability that individuals at working age (15–64 years old) work in the formal sector. For each outcome, the table shows the effect of FDI using both simple OLS regression and the IV estimate (2SLS). (The OLS and 2SLS regression results with all individual-level control variables are presented as Table A3 in the Appendix. Table A2 in the Appendix shows the results for the first stage for each outcome, documenting that there is a statistically significant and strong relationship between FDI and the weighted distance between provincial capitals and ports.)

As Table 5 indicates, our preferred model (2SLS) reveals the statistically significant and positive association between FDI and all three labor market outcomes. Our preferred model (2SLS) shows that if we increase FDI by 1%, we can expect that hourly wages will increase by 0.34% (column 2) and monthly wages by 0.37% (column 4), all else held constant. Similarly, the probability of an individual working in the formal sector also increases (column 6).

Furthermore, the results suggest that women earn significantly less per hour in the garment sector compared to men, even when controlling for age and education as well as other control variables. Furthermore, the interaction term between FDI and the female dummy (taking the value of 1 if an individual is female), showing the gender effects of FDI, are negative and statistically significant at the 10% level. The interpretation of the coefficient is that FDI does not seem to help to reduce the gender pay gap. In the case of formal employment, the coefficient of the interaction term is also negative but not significant.

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[6] Given that the data for total container throughput by each port in 2004 are not available, we use the forecast function based on the share during the period from 2009 to 2014 to estimate the share of each port in 2004. The calculated values are 14% for PPAP and 86% for PAS.

Table 5: FDI and Labor Market Outcomes: Garment Sector

	Hourly Wage		Log of Monthly Wage		Formal Employment	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
	OLS	**2SLS**	**OLS**	**2SLS**	**OLS**	**2SLS**
Log FDI	0.0155***	0.344***	0.0102**	0.375***	−0.0648***	0.135***
	(0.00379)	(0.0366)	(0.00388)	(0.0327)	(0.00825)	(0.0292)
FDI x female	−0.00761*	−0.00761*	−0.00788	−0.00788*	−2.94e-05	−2.94e-05
	(0.00407)	(0.00394)	(0.00459)	(0.00444)	(0.0124)	(0.0120)
Female	−0.0622**	−0.374***	−0.0356*	−0.403***	−0.0146	−0.0146
	(0.0230)	(0.0381)	(0.0193)	(0.0353)	(0.0667)	(0.0645)
Observations	5,202	5,202	5,246	5,246	6,037	6,037
R-squared	0.123	0.123	0.233	0.233	0.213	0.213

Note: Labor market outcomes of working age 15–64 years. Other individual-level control variables are not reported and include age, square root of age, years of education, marital status, urban dummy, household size, and number of children (see Table A3 for full regression table). All estimates control for province fixed effects, industry fixed effects and year fixed effects. Standard errors clustered at the provincial level for 24 provinces are reported in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: Authors' calculations.

Next, Table 6 displays the estimation results of both OLS and 2SLS in other manufacturing sectors. (The regression results including all individual-level control variables are presented in Table A4 in the Appendix.) As shown in Table 6, our preferred model 2SLS shows a positive association between FDI and all three labor market outcomes. In particular, as the specifications in column (2) and (4) suggest, the impact of FDI on wages is large. If we increase FDI by 1%, we can expect that the wage level will increase by 0.7%, all else held constant. Furthermore, the interaction term of FDI and the female dummy is negative and significant with regard to hourly wages. This result implies that FDI slightly exacerbates the gender wage gap. Concerning the probability of formal employment, FDI apparently does not help women either: women are less likely to have formal employment, with or without FDI.

Table 6: FDI and Labor Market Outcomes: Other Manufacturing Sector

	Hourly Wage		Log of Monthly Wage		Formal Employment	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
	OLS	**2SLS**	**OLS**	**2SLS**	**OLS**	**2SLS**
Log of FDI	0.0556***	0.711***	0.0528***	0.737***	0.0375***	0.319***
	(0.00892)	(0.0878)	(0.00904)	(0.0978)	(0.0115)	(0.0481)
FDI x female	−0.0494***	−0.0494***	−0.0459	−0.0459	0.00410	0.00410
	(0.0149)	(0.0143)	(0.0552)	(0.0529)	(0.0151)	(0.0146)
Female	−0.186***	−0.0806	−0.0555	−0.0555	−0.213***	−0.213***
	(0.0557)	(0.0824)	(0.248)	(0.237)	(0.0545)	(0.0527)
Observations	1,222	1,222	1,225	1,225	3,001	3,001
R-squared	0.163	0.163	0.334	0.334	0.290	0.290

Note: Labor market outcomes of working age 15–64 years. Other individual-level control variables include age, square root of age, years of education, marital status, urban dummy, household size, and number of children (Table A4). All estimates control for province-fixed effects, industry fixed effects and year-fixed effects, and industry-fixed effects. Standard errors clustered at the provincial level for 24 provinces are reported in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: Authors' calculations.

5. ROBUSTNESS CHECK

As a robustness check, we use the log of FDI with a one-year lag, $FDI_{p,t-1}$. (The 2SLS estimation results with province-, year- and industry-fixed effects/other manufacturing are presented in Tables A5 to A6 in the Appendix.) The estimation results show that the coefficient of FDI with a one-year lag is positive and highly significant in both the garment and the other manufacturing sectors for all of the labor market outcomes. Consistent with our main previous results, FDI with a one-year lag seems to help to increase hourly and monthly wages, as well as the probability of working in formal sector. Again, the results of the coefficient of the interaction term between $FDI_{p,t-1}$ and the female dummy variable are consistent with our main results, exhibiting a negative and significant relationship with regard to hourly and monthly wages in the garment sector. In the case of other manufacturing sectors, the interaction term turns positive and significant with regard to hourly wages, implying that there might be a time lag, as well as that FDI eventually helps to reduce the gender wage gap.

6. CONCLUSIONS

Although there is a large body of literature analyzing the effects of FDI on labor market outcomes, there is still little evidence regarding gender effects. Furthermore, only a few studies convincingly tackle the endogeneity problem. This paper has aimed to fill this gap by examining the gender effects of FDI on labor market outcomes in Cambodia with regard to wages and formality. We address the identification of causality problem by using the weighted distance between the provincial capitals and two main international ports in Cambodia as an instrument for FDI, arguing that access to foreign markets is one of the main reasons behind FDI. Overall, our estimation results show a positive and highly significant association between FDI and all three outcomes. FDI seems to lead to higher wages and more formal employment. However, we cannot find evidence that FDI helps to reduce the gender wage gap in either the garment sector or other manufacturing sectors.

This study has provided new insights into the effects of FDI on labor market outcomes in Cambodia. We have found that increased FDI inflows lead to higher wages as well as the probability of working in the formal sector. One reason for the higher wages might be that foreign companies tend to be more productive compared to their local counterparts. Attracting FDI can therefore help Cambodia to increase overall productivity and boost growth. However, as gender equality and women's economic empowerment are essential for inclusive growth in the country, it is important that foreign companies also contribute to more gender-equal outcomes. Given the fact that most of the foreign companies offer formal employment, the government could urge foreign investors to pay equal wages. In this study we have only analyzed the manufacturing sector. It would thus be worth taking the research question and approach to other sectors, such as agriculture and services.

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APPENDIX

Table A1: List of Provinces and Employment Share in 1997

Province Name	Garment	Other Manufacturing
Banteay Meanchey	0.02	0.04
Battdambang	0.17	0.06
Kampong Cham	0.14	0.12
Kampong Chhnag	0.03	0.02
Kampong Speu	0.02	0.01
Kampong Thom	0.05	0.02
Kampot	0.01	0.01
Kandal	0.05	0.07
Kaoh Kong	0.02	0.05
Kratie	–	0.01
Mondul Kiri	–	–
Phnom Penh	0.35	0.36
Preah Vihear	–	–
Prey Veng	0.06	0.10
Pursat	0.01	0.03
Rattanak Kiri	0.02	–
Siem Reap	0.02	0.03
Krong Preah Sihanouk	0.03	0.01
Steung Treng	–	0.01
Svay Rieng	0.01	0.00
Takaeo	0.02	0.04
Oddar Meancheay	–	–
Krong Kaeb	–	–
Krong Pailin	–	–
Total	1.00	1.00

Source: Cambodia Socio Economic Survey 1997.

Table A2: First-Stage Regression for the IV Estimate

	Garment	Other Manufacturing
	FDI	FDI
Instrument Weighted distance between provincial capitals and ports (=IV_km)	−.0390676 *** (.0058505)	−.0319890 *** (.0480529)
Observations	5,202	1,222
R-squared	0.569	0.553
Joint significance of all IVs	F=16.38 (P>F=0.00)	F=16.38 (P>F=0.00)

Table A3: FDI and Labor Market Outcomes: Garment Sector

	Hourly Wage		Monthly Wage		Formal Employment	
	(1)	(2)	(3)	(4)	(5)	(6)
Variables	OLS	2SLS	OLS	2SLS	OLS	2SLS
FDI	0.0155***	0.344***	0.0102**	0.375***	−0.0648***	0.135***
	(0.00379)	(0.0366)	(0.00388)	(0.0327)	(0.00825)	(0.0292)
FDI × female	−0.00761*	−0.00761*	−0.00788	−0.00788*	−2.94e-05	−2.94e-05
	(0.00407)	(0.00394)	(0.00459)	(0.00444)	(0.0124)	(0.0120)
Female	−0.0622**	−0.374***	−0.0356*	−0.403***	−0.0146	−0.0146
	(0.0230)	(0.0381)	(0.0193)	(0.0353)	(0.0667)	(0.0645)
Educational years	0.00959**	0.00959***	0.00931***	0.00931***	−0.00601**	−0.00601***
	(0.00335)	(0.00324)	(0.00250)	(0.00242)	(0.00237)	(0.00229)
Age	0.0239***	0.0239***	0.0354***	0.0354***	0.0123**	0.0123**
	(0.00700)	(0.00677)	(0.00820)	(0.00794)	(0.00546)	(0.00529)
Age squared	−0.000365***	−0.000365***	−0.000567***	−0.000567***	−0.000339***	−0.000339***
	(0.000118)	(0.000114)	(0.000143)	(0.000139)	(7.40e-05)	(7.16e-05)
Household size	0.00300	0.00300	0.00418	0.00418	0.00883**	0.00883**
	(0.00498)	(0.00482)	(0.00427)	(0.00414)	(0.00366)	(0.00354)
Married	0.0385*	0.0385*	0.0409**	0.0409**	−0.0269	−0.0269
	(0.0205)	(0.0198)	(0.0168)	(0.0163)	(0.0210)	(0.0203)
Number of children	−0.00920	−0.00920	−0.00854	−0.00854	0.00419	0.00419
	(0.00623)	(0.00603)	(0.00762)	(0.00738)	(0.00412)	(0.00399)
Urban dummy	0.0203	0.0203	0.0283	0.0283	0.000633	0.000633
	(0.0452)	(0.0438)	(0.0430)	(0.0416)	(0.0153)	(0.0148)
Observations	5,202	5,202	5,246	5,246	6,037	6,037
R-squared	0.123	0.123	0.233	0.233	0.213	0.213
Province-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A4: FDI and Labor Market Outcomes: Other Manufacturing Sector

	Hourly Wage		Monthly Wage		Formal Employment	
	(1)	(2)	(3)	(4)	(5)	(6)
Variables	OLS	2SLS	OLS	2SLS	OLS	2SLS
FDI	0.0556***	0.711***	0.0528***	0.737***	0.0375***	0.319***
	(0.00892)	(0.0878)	(0.00904)	(0.0978)	(0.0115)	(0.0481)
FDI × female	−0.0494***	−0.0494***	−0.0459	−0.0459	0.00410	0.00410
	(0.0149)	(0.0143)	(0.0552)	(0.0529)	(0.0151)	(0.0146)
Female	−0.186***	−0.0806	−0.0555	−0.0555	−0.213***	−0.213***
	(0.0557)	(0.0824)	(0.248)	(0.237)	(0.0545)	(0.0527)
Educational years	0.0214***	0.0214***	0.0222***	0.0222***	−0.00561	−0.00561
	(0.00566)	(0.00543)	(0.00506)	(0.00485)	(0.00396)	(0.00383)
Age	0.0438***	0.0438***	0.0429***	0.0429***	−0.00343	−0.00343
	(0.00760)	(0.00729)	(0.00767)	(0.00735)	(0.00891)	(0.00861)
Age squared	−0.000536***	−0.000536***	−0.000550***	−0.000550***	−7.74e-05	−7.74e-05
	(0.000125)	(0.000120)	(0.000108)	(0.000104)	(0.000108)	(0.000104)
Household size	0.0340*	0.0340*	0.0176	0.0176	0.0124*	0.0124**
	(0.0191)	(0.0183)	(0.0139)	(0.0134)	(0.00627)	(0.00606)
Married	0.0771	0.0771	0.0637	0.0637	−0.00383	−0.00383
	(0.0618)	(0.0592)	(0.0555)	(0.0532)	(0.0468)	(0.0452)
Number of children	−0.0392*	−0.0392*	−0.0398**	−0.0398**	−0.0241***	−0.0241***
	(0.0220)	(0.0211)	(0.0173)	(0.0166)	(0.00806)	(0.00779)
Urban dummy	0.0672	0.0672	0.0965	0.0965	0.0106	0.0106
	(0.0748)	(0.0717)	(0.0787)	(0.0755)	(0.0459)	(0.0444)
Observations	1,222	1,222	1,225	1,225	3,001	3,001
R-squared	0.163	0.163	0.334	0.334	0.290	0.290
Province-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effect	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A5: Robustness Check (Garment Sector)

	(1)	(2)	(3)
Variables	Hourly Wage	Monthly Wage	Formal Employment
ln_lag_FDI	0.151***	0.239***	0.0805***
	(0.0170)	(0.0186)	(0.0176)
FDI_female_lag	−0.0138**	−0.00815*	0.00429
	(0.00595)	(0.00455)	(0.0115)
Female	−0.185***	−0.257***	−0.0334
	(0.0308)	(0.0206)	(0.0583)
Observations	5,205	5,249	6,040
R-squared	0.123	0.233	0.213

Notes: Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A6: Robustness Check (Other Manufacturing Sector)

Variables	(1) Hourly wage	(2) Monthly wage	(3) Formal employment
ln_lag_FDI	0.571***	0.682***	0.240***
	(0.138)	(0.106)	(0.0710)
FDI_female_lag	0.0937**	0.00349	0.0430
	(0.0378)	(0.0223)	(0.0377)
Female	−0.576***	−0.274***	−0.216
	(0.186)	(0.0624)	(0.162)
Observations	2,550	2,995	3,008
R-squared	0.199	0.435	0.385

Notes: Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.